

Claims

- [c1] 1.A method for making an optical disc, comprising:
forming a first plastic substrate comprising greater than or equal to about 0.05 wt% colorant, based upon the total weight of the first plastic substrate, wherein a UV Bonding Index of the first plastic substrate is greater than or equal to about 0.5;
disposing a data layer between the first plastic substrate and a second substrate;
bonding the first plastic substrate to the second plastic substrate with a bonding layer; and
curing the bonding layer.
- [c2] 2.A method for making an optical disc according to Claim 1, wherein light transmission through the first plastic substrate, at a laser reading wavelength, is about 60% to less than 94%.
- [c3] 3.A method for making an optical disc according to Claim 2, wherein the light transmission is about 70% to about 85%.
- [c4] 4.A method for making an optical disc as described in Claim 1, wherein the UV Bonding Index is less than or equal to about 20.
- [c5] 5.A method for making an optical disc as described in Claim 4, wherein the UV Bonding Index is less than or equal to about 10.
- [c6] 6.A method for making an optical disc according to Claim 1, wherein the first plastic substrate comprises greater than or equal to about 0.25 wt% of the colorant, based upon the total weight of the first plastic substrate.
- [c7] 7.A method for making an optical disc according to Claim 6, wherein the first plastic substrate comprises greater than or equal to about 0.5 wt% of the colorant, based upon the total weight of the first plastic substrate.
- [c8] 8.A method for making an optical disc according to Claim 1, wherein the plastic substrate further comprises a plastic selected from the group consisting of polyetherimides, polyetheretherketones, polyimides, polyvinyl chloride,

polyolefins, polyesters, polyamides, polysulfones, polyimides, polyether imides, polyether sulfones, polyphenylene sulfides, polyether ketones, polyether ether ketones, ABS resins, polystyrenes, polybutadiene, polyacrylates, polyacrylonitrile, polyacetals, polyphenylene ethers, ethylene-vinyl acetate copolymers, polyvinyl acetate, liquid crystal polymers, ethylene-tetrafluoroethylene copolymer, aromatic polyesters, polyvinyl fluoride, polyvinylidene fluoride, polyvinylidene chloride, tetrafluoroethylene fluorocarbon copolymers, epoxy, phenolic, alkyds, polyester, polyimide, polyurethane, polysiloxanes, polysilanes, bis-maleimides, cyanate esters, vinyl, benzocyclobutene resins, and blends, copolymers, reaction products, and composites comprising at least one of the foregoing plastics.

- [c9] 9.A method for making an optical disc according to Claim 1, wherein the colorant is selected from the group consisting of anthaquinones, perylenes, perinones, indanthrones, quinacridones, xanthenes, oxazines, thioxanthenes, indigoids, thioindigoids, naphthalimides, cyanines, xanthenes, methines, lactones, coumarins, bis-benzoxaxolythiophenes (BBOT), naphthalenetetracarboxylic derivatives, monoazo and disazo pigments, triarylmethanes, aminoketones, bis(styryl)biphenyl derivatives, and reaction products and blends comprising of at least one of the foregoing colorants.
- [c10] 10.A method for making an optical disc according to Claim 1, wherein the data layer has a reflectivity of about 18% to about 30%.
- [c11] 11.A method for making an optical disc according to Claim 1, wherein the data layer comprises multiple reflective data layers having a reflectivity of about 5% to about 30%.
- [c12] 12.A method for making an optical disc as described in Claim 1, wherein the UV Bonding Index is about 1 to about 40.
- [c13] 13.A method for making an optical disc as described in Claim 12, wherein the UV Bonding Index is about 2 to about 20.
- [c14] 14.A method for making an optical disc as described in Claim 1, wherein the first plastic substrate and the second plastic substrate have thicknesses of less

than or equal to about 1.0 millimeter.

- [c15] 15. A method for making an optical disc as described in Claim 1, wherein the thickness is about 0.4 to about 0.7.